REMARKS

Applicants appreciate the Examiner's thorough review of the present application, and respectfully request reconsideration in light of the preceding amendments and the following remarks.

Claims 1-16 are pending in the application. Claims 1-5 have been amended to better define the claimed invention. New claims 6-16 have been added to provide Applicants with the scope of protection to which they are believed entitled. The amended/new claims find solid support in the original specification, e.g., page 6, lines 2-9, page 7, lines 3-10, page 10, lines 8-16, and equations 3-4, as well as the original drawings, e.g., FIG. 5. No new matter has been introduced through the foregoing amendments.

The claim objection is believed overcome in view of the above amendments. Specifically, amended claim 1 now recites that the feature extraction unit extracts only one characteristics vector, rather than three vectors as originally recited. The amended feature finds support in at least FIG. 1 where it is disclosed that out of three sequences inputted into the feature extraction unit 104, only one output is provided to determination unit 108.

The *35 U.S.C. 103(a)* rejection of all original claims as being obvious over *Moussa* in view of *Fan* is noted. Basically, the Examiner states that the *Moussa* reference discloses all limitations of independent claim 1, except for the claimed speed equalization. The Examiner then alleges that the missing feature is found in *Fan*, and concludes that it would have been obvious to combine *Moussa* with *Fan* to arrive at the claimed invention. Applicants respectfully disagree because *Moussa* and *Fan* singly or in combination do not teach or suggest the claimed speed equalization and velocity transformation.

The Examiner alleges that the claimed Speed Equalization of the first pattern transform unit is taught in the phrase "locally changing the scale of the time axis" of *Fan*, at column 2, line 39.

However, the phrase is not directed to speed equalization at all. Rather, it is directed to the Dynamic Time Warping (DTW), which is well known in the field of signature and voice recognition.

To understand the DTW technique, let us consider a first pattern in which the characters "a" and "b" are written in that order with a time gap between "a" and "b," and a second pattern in which the characters "a" and "b" are written in that order without the time gap. The two patterns are totally different when seen in the time axis and, generally, do not match each other. This is because the positions of "b" on the time axis in the two patterns are different. DTW is related to a matching method which considers the first and second patterns, in which the same characters are written in the same order, as matching one another, even though there is a time gap between the characters in the first pattern and there is no time gap between the characters in the second pattern.

On the other hand, the disclosed speed equalization allows velocity, which is one of characteristics contained in a signature sequence, to be read and considered. Therefore, an output of the speed equalization is a new shape (point sequence) where a velocity at each point of the signature is reflected.

Further, the disclosed velocity transformation performed by the second pattern transform unit is also for generating a new pattern where a velocity at each point of the signature is reflected.

In short, DTW is a method for comparing two patterns, while the disclosed speed equalization is a method for transforming an initial pattern to another new pattern representing characteristics of the initial pattern. Further, the disclosed velocity transformation is also a method for generating a new pattern by transforming the initial pattern. As discussed above, the disclosed speed equalization and velocity transformation allow velocity, which cannot be seen in the initial sequence/pattern or by DTW, to be visualized on the new, transformed patterns. Therefore, the analysis of the dynamic characteristics of a signature can be performed effectively by employing the

visualized characteristic of velocity. The claimed features of speed equalization and velocity transformation are therefore different from the prior art teachings and, hence, the original claims are not obvious over the art.

Additionally, the Examiner's position regarding the speed equalization feature appears to be self-contradictory in his analyses of claims 1 and 2. For example, as to claim 1, the Examiner admits that *Moussa* does not include any teaching related to speed equalization.[1] However, with respect to claim 2, which further details the claimed speed equalization, the Examiner relies solely [2] on *Moussa* as evidence that the detailed speed equalization technique was known in the art. Clarification of the Examiner's position as to whether *Moussa* teaches the claimed speed equalization or not is respectfully requested.

Notwithstanding the above, and solely for the purpose of expediting prosecution, Applicants have amended the claims to define over the art.

In particular, independent claim 1 has been amended to specify that the claimed speed equalization is "based on the assumption that linear velocities at the sample points on the locus are equal to a constant value." Advantages of embodiments implementing the claim feature have been disclosed in the specification, e.g., at page 6, lines 2-9 and page 7, lines 3-10. The applied references are completely silent as to the disclosed/claimed feature and advantages.

Withdrawal of the obviousness rejection of independent claim 1 in view of the above is now believed appropriate and therefore respectfully requested.

Independent method claim 5, which has been amended similarly to claim 1, and the dependent claims, including the new claims, are considered patentable at least for the reasons advanced with respect to independent claim 1.

---

[1] See Office Action at page 4, lines 11-14.

Each of the Examiner's rejections has been traversed. Accordingly, Applicants respectfully submit that all claims are now in condition for allowance. Early and favorable indication of allowance is courteously solicited.

The Examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,
LOWE HAUPTMAN HAM & BERNER, LLP

/Yoon S Ham/
Yoon S. Ham
Registration No. 45,307

Customer Number: 22429
1700 Diagonal Road, Suite 300
Alexandria, Virginia 22314
(703) 684-1111
(703) 518-5499 Facsimile
Date: December 12, 2007

[2] See Office Action at page 5, lines 1-6 from bottom.